P. 01

TRANSACTION REPORT

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FACSIMILE COVER SHEET

DATE: JAN. 2, 1997

NUMBER OF PAGES INCLUDING THIS COVER SHEET: 6

TO: PAT GOCHNOUR
GOCHNOUR & ASSOCIATES (SUMMO)

FAX NUMBER: (303) 721-9298

FROM: TONY GALLEGOS PHONE (801) 538-5267
Minerals Reclamation and Development Program

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TO: Pat Gochnour
Gochnour & Associates (Sumo)

FAX NUMBER: (303) 721-9298

FROM: Tony Gallegos phone (801) 538-5267
Minerals Reclamation and Development Program

PHONE: (801) 538-5291
FAX: (801) 359-3940

SUBJECT: M/037/088 Lisbon Valley Copper Project
Sumo USA

REMARKS: - The reclamation contract and initial surety form look fine. Here is a copy of the Executive Summary I am currently editing. Please call me with any comments.

Should you encounter any problems with this copy, or do not receive all the pages, please call

EXECUTIVE SUMMARY

Prepared January 2, 1997 --- DRAFT ---

Mine Name: Lisbon Valley Copper Project
Operator: Summo USA Corporation
P.O. Box 847
Moab, Utah 84532

I.D. No.: M/037/088 (BLM UTU-72499)
County: San Juan
New/Existing: New
Mineral Ownership: private(fee),BLM,State
Surface Ownership: private(fee),BLM,State

Telephone: (801) 259-3077
Contact Person: Robert Prescott

Lease No.(s): ML-17661, ML-20569
Permit Term: Life of Mine

Life of Mine: 10 years

Legal Description: all or parts of the following: sections 22, 23, 24, 25, 26, 27, 34, 35, 36, T30S, R25E; section 1, T31S, R25E; sections 30, 31, T30S, R26E.

Mineral(s) to be Mined: copper

Acres to be Disturbed: 1,048 acres (519 acres on federal land, 273 acres on state land, and 256 acres on fee land).

Present Land Use: mining, ranching, wildlife habitat

Postmining Land Use: mining, wildlife habitat

Variances from Reclamation Standards (Rule R647) Granted: R647-4-111.7 - Highwalls -four pits will remain open and unreclaimed with highwall angles steeper than 45 degrees. R647-4-111.7 - Dams and Impoundments - four open pits will remain which may impound meteoric waters. R647-4-111.13 - Revegetation - four open pits will not receive revegetation treatments (with the exception of haul roads which access the pit bottoms) and will not be required to meet the 70 percent of pre-existing ground cover requirement.

Soils and Geology

Soil Description: The majority of the disturbance would occur in the Barnum, Cahona, and Rock Outcrop-Rizno complex soil series. Most of the Centennial pit lays within the Dumps-Pits complex soils series which was disturbed during previous mining activities and never reclaimed.

pH: 7.9 to 9.0

Special Handling Problems: A minor amount of mine waste from uranium mining in the immediate vicinity of the GTO pit will be removed from the pit area and placed in a waste dump. Approximately 10 percent of the total amount of mine waste rock is considered potentially acid generating. This potentially acid generating material is associated with the coal bearing rock units and is visibly distinguishable from the other waste materials. This potentially acid generating material will be selectively placed in the central portions of the waste dumps to isolate the material and provide a maximum amount of surrounding non-acid generating waste material.

Geology Description: the structure of the project area is dominated by two features: the southeast end of the Lisbon Valley Anticline and the Lisbon Valley fault zone. Rocks exposed at the surface within and surrounding the Lisbon Valley range in age from the Pennsylvanian, represented by the Hermosa Formation, through the Quaternary. Sedimentary rocks exposed in Lisbon Valley consist mainly of fluvial sandstones and claystones. These rocks are interbedded with limestones and conglomerates that were deposited during the Cretaceous Era. Ore deposits in the project area are generally tabular in shape, parallel the sedimentary bedding planes and are elongated along the axis of the Lisbon Valley Fault. The Lower Cretaceous Burro Canyon Formation underlies the Dakota Sandstone of the Upper Cretaceous Age. The copper ore to be mined occurs in rocks of the Dakota Sandstone and underlying Burro Canyon Formation. The Burro Canyon Formation consists of brown and grey, commonly silicified sandstone and conglomerate overlain by interbedded limestone and mudstone. The Dakota Sandstone consists of yellow and brown, predominantly medium-grained sandstone with some conglomerate. Copper ore mineralization in these formations predominantly consists of the copper oxides, azurite, and malachite, with minor copper sulfide minerals (mostly chalcocite). Ore minerals are found coating sand grains, filling fractures, and as intergrain matrix. Interbeds of coal and carbonaceous mudstone are present in the Dakota Sandstone.

Hydrology

Ground Water Description: water bearing units in the study area are part of the Mesozoic Aquifer. Regional groundwater flow directions in this aquifer unit are generally towards the west, and it is recharged from the east. Recharge to the aquifers from precipitation if very limited in extent. Groundwater is known to exist in three water bearing units beneath the project site. The shallow aquifer extends to approximately 400 feet below ground surface and is comprised of the Burro Canyon Formation and Brushy Basin Member of the Morrison Formation. This zone of relatively high hydraulic conductivity rocks is dry in some portions of the valley. Groundwater flow in this unit is highly segmented, with faults appearing to act as barriers to groundwater flow across the faults. An alluvial aquifer of limited extent exists in the valley fill sediments near the Sentinel Pits. A deeper aquifer at the site is located at depths of 900 feet below ground surface or greater in the Centennial Pit area and has not been sampled nor tested. This aquifer is of more regional extent and consists of the Entrada and Navajo Sandstones. Groundwater is also locally perched on clay and shale layers at the shallower depths within the project area. Groundwater in the valley fill exceeded Utah primary or secondary standards for aluminum, manganese and lead. Groundwater in the Burro Canyon Member in the Centennial Pit area exceeded Utah primary or secondary standards for aluminum, cadmium, iron, manganese, zinc, sulfate and TDS. Groundwater in the Burro Canyon Formation in the GTO Pit area exceeded Utah primary or secondary standards for aluminum, antimony, cadmium, iron, lead, manganese, nickel, and thallium. Groundwater in the Mancos Shale exceeded Utah primary or secondary standards for manganese, sulfate, and TDS. Groundwater in the Hermosa Formation exceeded Utah primary or secondary standards for aluminum, antimony, and fluoride. Samples from all of these units exceeded the primary standards for gross alpha and gross beta activities.

Surface Water Description: Surface water flow is ephemeral in the project area. Surface runoff from areas beyond the rim of the valley generally flows away from the valley. Only the valley floor acts as a catchment area for surface water flow. The flow system which exists in the valley is poorly developed. Surface water drainages in the project area are characterized by dry washes typical for this area of Utah. Ephemeral flow occurs only after major precipitation events such as thunderstorms. A surface water drainage divide exists east of the Centennial Pit. The area east of this divide is drained predominantly by an ephemeral stream that trends to the southeast along the axis of Lower Lisbon Valley. The western portion of the project area is drained by a

main ephemeral stream and several tributaries occurring in the area of the proposed leach pad west of the Centennial Pit. The main ephemeral stream from Little Valley flows east then northeast and joins an ephemeral stream from Upper Lisbon Valley. The nearest perennial stream is the Dolores River, located approximately 20 miles east of the project site. Surface water presently on the site is limited to that flowing from Lisbon and Huntley Springs, water intermittently ponded in the Centennial and GTO Pits, and two cattle ponds. Flow measurements in April 1994 revealed flow rates of approximately 1.2 gpm for the Lisbon Spring and 0.1 gpm for the Huntley Springs. Annual precipitation for Lisbon Valley is about 15 inches with most of that falling in the fall and winter months. Dissolved antimony slightly exceeded the primary standard in samples from Huntley Spring and the cattle pond near Sentinel Pit. Gross alpha exceeded standards in Lisbon Spring and gross beta was exceeded in all samples with the exception of that from Huntley Spring.

Water Monitoring Plan: Ground water monitoring will be conducted at existing wells 94MW-4 and SLV2. An additional deep monitoring well has also been installed. NEED TO UPDATE HERE Monitoring will be conducted in accordance with the overall groundwater monitoring plan for the site, most likely on a quarterly basis. Leak detection will be in place for the heap leach pad and ponds. A post-closure groundwater monitoring program will be instituted.

Ecology

Vegetation Type(s); Dominant Species: Pinyon-juniper zone (PJ): Shrubs are big sagebrush, antelope brush, Mormon tea, rabbitbrush, mountain mahogany, serviceberry, bitterbrush, and snakeweed. Forbs are cryptantha, milk vetch, desert paintbrush, and bladder pod. Grasses are wheat grass, indian ricegrass, and bluegrass. Isolated cactus are present on the drier slopes. Sagebrush zone (SB): sagebrush is dominant with the exception of some golden rabbitbrush in areas that have been disturbed. Some areas have an understory of cheatgrass and native grass. Grassland/rangeland zone (GR): predominantly sagebrush (or in some cases PJ). Some areas were chained during the 1960s and early 1970s and seeded with crested wheatgrass. Cheatgrass, blue grama, needle-and-thread, and Indian ricegrass are also growing in some of the crested wheatgrass seedings. Previous mining activity has intruded into the PJ and SB zones, and vegetation community composition reflects disturbance. Approximately 85 acres disturbed by previous mining activity and never reclaimed now have only a very sparse cover of golden rabbitbrush.

Percent Surrounding Vegetative Cover: Ranges from 2% in previously disturbed areas to 30% in previously undisturbed areas.

Wildlife Concerns: None. No threatened and endangered species have been identified in the project area, and no critical habitat for threatened and endangered species has been identified on the adjacent public lands.

Surface Facilities: a one-story building to include offices, locker and shower rooms, first aid room, lunch room, conference and training room; a laboratory building to include a wet bench area, fine bench area, coarse reject bench area, and bench area for jaw crusher; a two-story truck shop repair building to accommodate mine equipment and contain oil storage and dispensing tanks and equipment, overhead crane, antifreeze storage tank and dispensing equipment, wash bays, waste oil and drainage sump to contain spills within the truck shop area; a warehouse building will be housed within the same building as the truck shop; a bermed and lined fuel storage and dispensing station for diesel fuel and unleaded gasoline; a bermed, lined and fenced chemical use and storage area with signs to provide warnings of the potential hazards. Reagents stored and used onsite will include sulfuric acid, an extractant, a diluent (kerosene), ferrous sulfate, cobalt sulfate and chlorine.

Ammonium nitrate would be stored in silos or bins in a bermed area. Storage tanks for process water. All potable water will be provided by bottled water. Power will be provided by a suspended raptor-proof 69-kV powerline from the existing Hatch substation running east to Lisbon Valley. An ore stockpile and crushing area. A conveyor system for ore placement on the lined heap leach area. A solvent extraction electrowinn (SX-EW) facility. A double lined pregnant pond and raffinate pond with leak detection systems. A lined stormwater pond and emergency overflow pond.

Mining and Reclamation Plan Summary:

During Operations: Mining operations will be conducted in four pits Sentinel #1, Sentinel #2, Centennial, and GTO. Rock berms or fences would be installed to prevent public access to the pits. Dozers will be used to rip ore and waste in addition to drilling and blasting to fragment the rock. Blast holes would be drilled using a 10-inch rotary drill with ANFO as the explosive agent. Waste rock will be hauled from the open pits to the waste dumps using haul trucks and scrapers. Soils from the waste dump area would be salvaged for use in reclamation prior to dumping. Dumps would be constructed by a combination of end dumping and dozing the material over the side of the dump in 40 - 50 foot lifts while maintaining an overall outslope of 2.5h:1v. Haul roads would be installed inside and outside the pits, and among facilities to access the pits, waste dumps and the ore crushing facilities. Approximately 15,000 linear feet of haul roads would be constructed. Ore would be hauled to the crushing facilities located near the heap leach pad. Ore would be crushed to a size of 1 1/2 to 2 inches by a jaw crusher and secondary cone crusher. Crushed ore would be transferred to the heap leach pad by a series of conveyors within a lined conveyor corridor. Ore will be placed on the heap in three 36-foot high lifts using a radial stacker. The heap leach pad will include a system of synthetic and clay liners and a leak detection system. The heap leach pad will eventually cover 266 acres. A sulfuric acid solution would be applied to the ore using drip emitters or spray nozzles. Solutions which have percolated through the heap would be collected and piped to the pregnant pond. The pregnant solution is then run through the solvent extraction/electrowinn (SX/EW) plant. The SX circuit would consist of three mixer/settlers and associated storage tanks. The EW circuit would plate out the copper from the strong acidic electrolyte onto cathodes. The cathode copper would be removed from the cells and shipped off site for fabrication purposes.

After Operations: Pit walls and benches would not be revegetated. Pit benches would be allowed to fill with rubble from natural sloughing activities. Haul roads which accessed pit bottoms would be ripped, covered with soil and seeded. It is estimated that water would collect in each of the pits. The pit perimeters would be planted with indigenous tree species to partially screen the open pits. Waste rock dumps would be developed with benching to maintain an overall slope of 2.5:1. Some grading of waste dumps is required to break up the individual bench levels prior to the application of growth medium. The tops of the waste dumps would be ripped to a depth of about four feet and scarified to form a roughened seedbed surface. The surface would be contoured to encourage infiltration rather than ponding. The leached ore on the pad would be flushed with fresh water to reduce the chemical characteristics of the effluent to acceptable levels. Other treatments such as lime amendments may also be used to neutralize the heaps. Pumping activities would be performed to reduce the solution inventory by using high evaporation sprinklers. After the heap has been decommissioned, the heap slopes would be reduced from the operational slope of 2:1 to an overall slope of 2.5:1. The benches and top of the heap would be graded to establish positive drainage. The top and sides of the heap would be either covered with compacted soils or treated with commercially available products if needed. NEED TO UPDATE HERE FOR POSSIBLE CLAY LAYER Waste rock would be placed on top of this prepared layer at

a minimum of several feet to provide an adequate rooting zone. Plant growth medium would be spread on top of the waste rock cap and the area would be seeded. All exterior piping, retention and diversion structures would be removed. No perforation of the heap leach pad liner is planned. Solution ponds would be allowed to dry, and if necessary, the process solutions would be treated as dictated by results of the laboratory testing. Once the ponds are dry, the liners would be folded into the ponds and waste rock placed over them. The pond areas would be graded to achieve a positive drainage, covered with plant growth medium, seeded and fertilized as needed. All equipment at the project area would be removed. No chemical or electrical hazards would remain after closure. All buildings and facilities would be dismantled and removed from the site or buried. Foundations would be removed and buried elsewhere on the site or buried in place. Facility areas would be contoured to create a natural appearance and to prevent erosion. Plant growth medium would be applied and the areas seeded and fertilized as needed. Roads and other facilities not deemed essential would be ripped, as necessary, to alleviate compaction, graded to route runoff, covered with plant growth medium, seeded and fertilized as indicated by test plot results. The site would be monitored for a minimum of two years following completion of all final reclamation activities.

Surety

Amount: $1,863,967.50 ($6,213,225 for 10-yr mine life)
Form: Surety Bond
Renewable Term: 3 years or 314.4 acres

jb
M037088.exc